

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 04-144103

(43)Date of publication of application : 18.05.1992

(51)Int.Cl.

H01F 1/053
B22F 1/02
B22F 3/00
// C22C 38/00

(21)Application number : 02-266983

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(22)Date of filing : 04.10.1990

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(54) MANUFACTURE OF RARE EARTH-IRON-BORON PERMANENT MAGNET ALLOY POWDER

(57)Abstract:

PURPOSE: To enable the preheating of a preliminary compact so as to sharply reduce cycle time by crushing the thin pieces consisting of fine crystalline substances or mixture of fine crystalline substances and amorphous substances, gotten by melting rare earth-iron-boron alloy and quenching it, and then adding and mixing a specified amount of thermosetting resin to it so as to cover the surface of magnetic powder with thermosetting resin.

CONSTITUTION: 0.02-0.5wt.% thermosetting resin is added and mixed to the magnetic powder, which is gotten by crushing the thin pieces consisting of fine crystalline substances or mixture of fine crystalline substances and amorphous substances, gotten by melting rare earth-iron-boron alloy and quenching it, so as to cover the surface of the magnetic powder with thermosetting resin. The thermosetting resin shall be one or more kinds among phenol, urea, melamine, unsaturated polyester, epoxy, silicone resins. The magnetic powder is cold-molded at a temperature between room temperature and 200°C and then is hot-processed into a preliminary compact, or further it is hardened at 100-300°C. Or, the preliminary compact is preheated at 400-650°C, or it is successively sintered at 600-700°C under pressurization.

LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]